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ABSTRACT

The American education system is being challenged to raise the academic achievement of students to prepare them for the jobs of the future. Yet many demographic, economic, and social factors are making that task more difficult. Low birth rates, especially among non-Hispanic whites, along with high immigration rates, have increased the share of minority and non-English-speaking students in public schools. The rise in single-parent families has increased the number of poor students, and migration from the cities to the suburbs has concentrated poor and minority students in innercity schools. These same children will make up a greater share of the future labor force. At the same time, the aging of the general population may lessen the commitment of homeowners--whose taxes pay between one-third and one-half of education costs. The aging labor force may bring a shortage of qualified teachers, particularly in specialized subject areas. Poor and minority students generally have below average academic skills and are more likely to drop out of high school than nonminority students. However, the skills of American students rank below those of most other industrialized nations, calling into question the ability of Americans to succeed in an increasingly international economic system. Reforms of educational finance systems, court-ordered integration, and stiffer requirements for teachers and for graduation from high school are among many attempts to meet the immense challenges faced by American schools. (Author)

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POPULATION BULLETIN
Vol. 44, No. 4, December 1989

American Education: The Challenge of Change

By Jeanne E. Griffith, Mary J. Frase, and John H. Ralph

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Abstract—The American education system is being challenged to raise the academic achievement of students to prepare them for the jobs of the future. Yet many demographic, as well as economic and social factors are making that task more difficult.

Low births rates, especially among non-Hispanic whites, along with high immigration rates have increased the share of minority and non-English-speaking students in public schools. The rise in single-parent families has increased the number of poor students and migration from the cities to the suburbs has concentrated poor and minority students in inner city schools. These same children will make up a greater share of the future labor force. At the same time, the aging of the general population may lessen the commitment of homeowners—whose taxes pay between one-third and one-half of education costs. The aging labor force may bring a shortage of qualified teachers, particularly in specialized subject areas.

Poor and minority students generally have below average academic skills and are more likely to drop out of high school than non-minority students. However, the skills of American students rank below those of most other industrialized nations, calling into question the ability of Americans to succeed in an increasingly international economic system.

How can schools be improved and minority student achievement enhanced? Reforms of education finance systems, court-ordered integration, and stiffer requirements for teachers and for graduation from high school are among many attempts to meet the immense challenges faced by American schools.

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American Education: The Challenge of Change

By Jeanne E. Griffith, Mary J. Frase, and John H. Ralph

Page

Introduction . . . 3
The Goals of Education . . . 5
Rising Levels of Education . . . 5
  Rewards from Education . . . 6
Students—Demographic Profile . . . 7
  Race, Ethnicity, and Poverty . . . 9
  Trends in Family Life . . . 12
Teachers . . . 15
  Racial and Ethnic Makeup . . . 16
  Will There be a Teacher Shortage? . . . 16
Increasing Costs of Education . . . 17
Grading Student Performance . . . 19
  Racial and Ethnic Differences . . . 20
Dropping Out of School . . . 22
Are Some Schools Better? . . . 24
  Differences Within Schools . . . 26
Finance Reform . . . 26
Education Reform . . . 30
  Impact of Reform . . . 31
Conclusion . . . 33
References . . . 34
Suggested Readings . . . 37
Discussion Points . . . 38

Boxes
1. Education and the American Underclass . . . 9
2. Growth of Preschool Education . . . 14
3. Literacy Among Young Adults . . . 21
4. School Governance . . . 27
5. The Role of the Courts . . . 29

Figures
1. Student Enrollment in Public Elementary and Secondary Schools, 1950–2000 . . . 7
2. Change in Public School Enrollment by State, 1981–1988 . . . 8
3. Median Annual Salaries for Selected Occupations, 1987 . . . 16
4. Status Dropout Rates by Race/Ethnicity and Sex: 1968–1988 . . . 23
5. Percent of Low-Performing Students Who Dropped Out of School by Race/Ethnic Group, 1980–1982 . . . 24
6. Percent of High School Principals Reporting Difficulty in Hiring Qualified Teachers by Subject Area, 1986 . . . 31

Tables
1. Average Annual Earnings by High School Graduation Status, Sex, and Academic Skill Level, for Americans Ages 20–23 in 1981 . . . 6
2. State Enrollment by Race/Ethnic Group, 1986 . . . 11
3. American Children in Single-Parent Families by Race, 1988 . . . 13
4. Average Annual Salaries of Teachers in U.S. Public Elementary and Secondary Schools, 1959–1988 . . . 15
5. Total Education Expenditure per Pupil, 1978–1988 . . . 18
6. Revenue Sources for U.S. Public Elementary and Secondary Schools, 1920–1987 . . . 28

POPULATION BULLETIN
Vol. 44, No. 4, December 1989

NEA/Joe Di Dio

The changing demographic characteristics of American students are challenging the educational system.

American Education: The Challenge of Change

By **Jeanne E. Griffith, Mary J. Frase,** and **John H. Ralph**

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The views expressed in this *Bulletin* are those of the authors and do not represent the views or policies of the U.S. Department of Education.

Elementary and secondary education is a big enterprise in the United States—involving nearly one of every four Americans. In 1987–88, there were an estimated 45.4 million students, 2.6 million teachers, and 2.2 million additional staff involved in the education system. Public expenditures for education—an estimated 309 billion dollars in 1988—consume about the same level of resources as national defense. The massive outlays of financial and human capital have been supported by the American people because of the importance attached to education: The schools prepare the young to fill adult roles as workers, informed citizens, and parents of the next generation.

As we enter the 1990s, many question the ability of the American education enterprise to meet even these basic goals as economic policies tighten school budgets, the supply of qualified teachers seemingly dwindles, and the percentage of poor and minority children increases. At the same time, schools are asked to turn out more educated entry-level workers for the labor force of the future.

More than most other public services, education is inextricably linked to demographic trends. The number of children determines the size and nature of the schools; fluctuations in student enrollment affect the number and age profile of the teachers. The education system was overburdened during the 1950s and 1960s when the post-World War II baby

boomers reached school age. Then, declining enrollments during the 1970s and early 1980s closed some schools and consolidated others. More recently, several demographic trends have affected the American educational system. High rates of immigration, combined with low birth rates among white non-Hispanics, have increased the proportion of minority students in the schools. Persistent urban poverty and the movement of the middle class families to the suburbs have concentrated poor, minority students in central cities. An underclass, characterized by long-term poverty and alienated from mainstream society, appears to be emerging—and their children comprise an increasing share of U.S. students.

Population shifts out of the economically depressed areas in northeastern and central states to the south and west have caused enrollments to swell in some areas and fall in others. And, whether enrollments go up or down, the cost of educating students appears to be increasing.

The share of the elderly in the U.S. population is increasing and the priorities of these older individuals for public spending often compete directly with education. In addition, the composition of homeowners—who pay for a large proportion of school costs through their property taxes—is changing. Nonfamily households are projected to increase by 40 percent between 1985 and 2000; married-couple households by only 12 percent. A greater proportion of households will either be childless (with limited personal interest in local schools) or consist of single-parent families (and have a greater likelihood of being poor). Neither group is likely to be avid supporters of property tax increases to fund the school systems.[1]

Further, many Americans question the efficacy of education programs and the wisdom of educators. A number of factors contribute to this concern: disappointing test results; escalating costs; debates over such social issues as desegregation, sex education, and prayer in schools; teacher strikes; a general decline of trust in public officials; and low academic standards.

NEA/Joe Di Dio

In the 1990s and beyond, more jobs will require at least a high school education.

There is also a growing concern, voiced by business, government, and academia, that American students in the 1980s and 1990s will not be adequately prepared to meet the labor force needs of the 21st century. Numerous studies, such as *Workforce 2000* by the Hudson Institute, predict that the jobs of the future will require more technical knowledge and higher levels of literacy than in the past. The U.S. Department of Labor projects that 30 percent of the new jobs in the 1990s will require a college degree, compared to about 22 percent at the end of the 1980s. Over the same period, jobs available to high school dropouts will fall from 18 to 13 percent. Workers will need to be more flexible—possessing the basic skills necessary to

undergo retraining—because they will probably change jobs several times during their careers. Thus, amid the complaints that educational levels are deteriorating, comes a loud call for improving the educational achievement of American students.

The need for raising the skill levels of all students is further emphasized by the fact that fewer new workers will enter the job market in the next two decades. Just as the baby boom provided a surplus of entry-level workers in the 1970s and 1980s, the "birth dearth" generation that followed it siphoned off the surplus. In 1980, persons 18 to 24 comprised 22 percent of the U.S. labor force, but by the year 2000, that percentage will fall to about 15 percent. Business will no longer be able to pick the best and ignore the rest. With fewer new entrants, the productivity of available workers must increase.

Immigrants and native-born minorities will make up about 40 percent of the entry-level workers in the coming decades. Thus, the national call to increase the basic achievement of minority students has a solid economic justification.

This report examines the challenges to the American elementary and secondary education system brought about by the demographic changes over the past few decades, and looks at prospects for improvements from current reform movements. An overriding concern is the lagging performance of disadvantaged students, who comprise a growing share of school enrollments and the future labor force.

The Goals of Education

The function of education is to prepare each generation for participation in the world of work and responsibility by transmitting the knowledge, attitudes, and culture of the adult world to the young.

Education produces both public and private benefits. The private benefits are those that students derive from education—higher incomes, better jobs, and the personal enjoyment of learning. The public benefits include economic growth through higher productivity and lower unemployment rates, reduced need for public assistance, and lower crime rates. Furthermore, in pluralistic societies such as the United States, schools serve to assimilate new immigrants and to instill the cultural and political values that underlie a democratic form of government.

Schools are also gatekeeping institutions: youngsters leave school with varied prospects for employment, military service, and further schooling based on differences in school performance (for example, grade point averages or test scores) and in school attainment (years of schooling and credentials earned).

Rising Levels of Education

Since the early part of this century, more and more young adults have succeeded in completing at least a high school education. In 1920, only about one-fifth of the nation's 25-to 29-year-olds had completed high school; by 1950, that figure had increased to just over half, and by 1988, to 85.9 percent. Until recently, there were dramatic differences between blacks and whites: in 1920, 22 percent of whites had completed high school, but only 6 percent of blacks and other races had done so. Even in 1960 the differences were stark—only 39 percent of non-whites had completed high school compared to 64 percent of whites. By 1988, the gap between the races had almost disappeared: high school completion rates were 86.4 and 83.3 percent, for whites and blacks, respectively.[2] However, there is a continued racial gap in test scores and college attendance.

While the share of youth completing a high school education has been growing, the share of high school graduates continuing on to college has increased little since the late 1960s. In fact, there was a slight decline between the late 1960s and the early 1980s, and then a gradual increase through 1986 when it reached 34.4 percent.

College participation rates among minority youth who have completed high school have been declining since the mid-1970s. The share of black high school graduates going on to college peaked at 33.5 percent in 1976, decreased to 26.1 in 1985, and increased slightly to 28.6 in 1986. Among Hispanics, the share of high school graduates enrolled in college declined from a high of 35.8 percent in 1976 to a low of 26.9 in 1985.[3]

Rewards from Education

There are substantial monetary returns to graduation from high school and attending college. However, many other factors—including personal characteristics, economic conditions, and the demand for workers—affect how much benefit each additional year of education brings an individual.

Crystal Images

Schools are being asked to improve the performance of American students.

During the 1970s, the income advantage gained from finishing high school and going on to college declined.[4] There was a glut of college-educated entry-level workers in the 1970s. In addition to general economic conditions, this oversupply resulted from relatively high college attendance rates among the large baby boom generation. These declines in the wage gap by education may have been at least partially responsible for the drop in the share of high school graduates attending college noted above. During the 1980s, the financial benefits of

Table 1. Average Annual Earnings by High School Graduation Status, Sex, and Academic Skill Level, for Americans Ages 20-23 in 1981

Academic Skill Level (Quintile)	Earnings in 1979-80			
	Males		Females	
	Dropouts	Graduates	Dropouts	Graduates
Lowest	$ 4,616	$ 6,013	$ 1,429	$ 2,936
Second lowest	6,595	8,639	2,156	4,235
Middle	6,765	8,190	3,102	4,629
Second highest	8,321	9,433	2,465	5,469
Highest	9,086	10,738	4,146	6,003

Source: National Longitudinal Survey of Young Americans, cited in Gordon Berlin and Andrew Sum, "Toward a More Perfect Union: Basic Skills, Poor Families, and our Economic Future," Occasional Paper No. 3, Ford Foundation Project on Social Welfare and the American Future (New York: Ford Foundation, February 1988) p. 11.

college improved markedly, probably a reflection of the rising demand for educated workers. By 1986, the differences in weekly wages of young high school and college graduates approached 70 percent.[5]

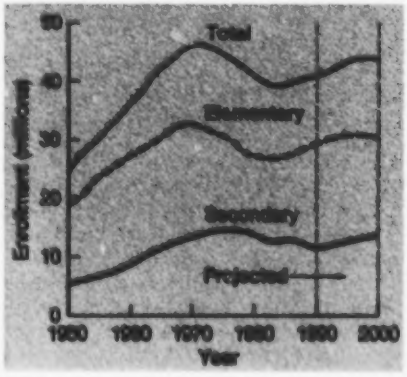
Beyond demographic trends and economic conditions, individual factors also affect returns to education. Educational attainment clearly affects an employee's starting level and wage, but with time, employers are better able to gauge an individual's skills and abilities. And skills, as reflected in achievement test data, also appear to affect earnings. Attaining a high school diploma pays off: male graduates at the second lowest academic-skills level earned more than dropouts at the second highest level, as Table 1 shows. But within the groups of graduates and dropouts, individuals who showed higher academic skills clearly were rewarded with more pay. Future earnings appear to be related not only to whether an individual succeeds in graduating, but also to how well he performs in school.

Thus, while schools have been graduating a greater proportion of students, many question how well they are being educated, and whether a high school diploma stands for less than in the past. But an assessment of the educational status of the average American must be examined within the context of the changing makeup as well as the numbers of the school-age population.

Students—Demographic Profile

In fall 1988, 45.4 million children were enrolled in elementary and secondary schools in the U.S. This is far less than the peak of 51.3 million public and private school students in 1970 and 1971, but reflects increases in enrollment every year since 1984 (see public school trends in Figure 1).

Figure 1. Student Enrollment in Public Elementary and Secondary Schools, 1950-2000



Note: Excludes private school students, who comprise 8 to 12 percent of all U.S. students.

Source: National Center for Education Statistics.

Most children attend public schools. In 1988, only 5.2 million students, or 11.5 percent, were in private schools. The share of students in private schools has fluctuated slightly throughout this century, but generally has stayed within the range of 8 to 12 percent.

With nearly universal enrollment of American children, fluctuations in annual enrollment are driven by trends in the number of births. During the height of the post-World War II baby boom, between 1954 and 1964, the number of annual births in the United States exceeded 4 million. The U.S. birth rate began a steady decline after 1964 which continued until 1975—the birth dearth period. In 1975, only 3.1 million babies were born, but annual births increased nearly every succeeding year up to 1988, when 3.9 million births occurred.[6]

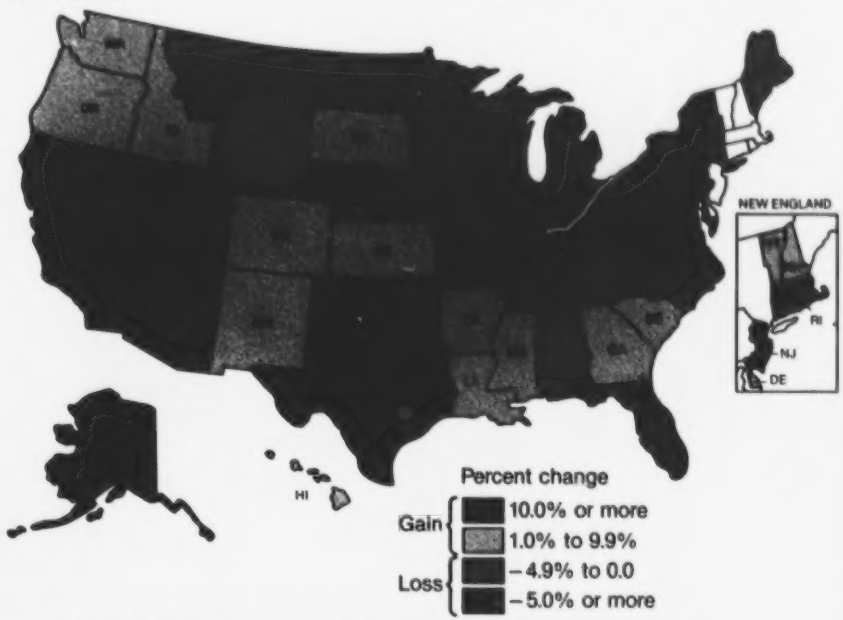
Following the trends in births, elementary enrollments began to decline after 1969, when the first of the baby bust cohorts reached school age, and began

to edge back up in 1985. Between 1985 and 1988, elementary enrollment grew by 3.8 percent, to 32.4 million students. Enrollment is expected to continue its ascent until about 1996. The number of secondary students, in decline since 1977, is expected to continue to fall through 1990, after which the larger numbers of elementary students will begin to enter the higher grades. Secondary enrollment fell 5.9 percent between 1985 and 1988, to 13.0 million, but is expected to increase to 14.0 million by 1995 and to 14.8 million by 2000.

At state and regional levels, the fluctuations in enrollments have not followed national trends (see Figure 2). While the national public school enrollment figures for kindergarten through 12th grade rose by only 0.2 percent between 1981 and 1988, enrollment increased by 10 percent or more in seven states, including a 20 percent increase in Utah, 16 percent in Florida, 14 percent in California and Arizona, and 11 percent in Texas. States whose total population declined due to net outmigration during the 1980s also experienced declines in student enrollment. Five states (Massachusetts, Michigan, New Jersey, Pennsylvania, and West Virginia) lost 10 to 12 percent of their public school enrollment between 1981 and 1988.

In addition to swings in the number of students, several changes in the characteristics of children and families have presented major challenges to the educational system in recent decades. Most of these trends will intensify during the 1990s. Among these are:

Figure 2. Change in Public School Enrollment by State, 1981–1988



Source: National Center for Education Statistics, *Digest of Education Statistics, 1989.*

Box 1. Education and the American Underclass

Educating the children of the underclass poses seemingly intractable problems for the U.S. education system. Although definitions vary, the underclass, distinguished from the poor in general, are characterized by long-term joblessness and poverty, marital instability, single-parent families, intergenerational welfare dependency, criminal behavior, and habitual substance abuse. In contrast, much of the U.S. poverty population lives in two-parent families, is employed (though at low wages), or is retired, and has stronger ties to the economy and society.

While *racial* segregation declined in many metropolitan areas following the civil rights legislation of the 1960s, increasing *economic* segregation has served to isolate minority children in the poorest schools and neighborhoods. Among other factors, this growth of the underclass in central cities has been intensified by the influx of poor immigrants, especially Hispanics, and the outflow of the more stable, middle-class black and white families to the suburbs.

There is considerable controversy about how effective schools can be in the face of home environments that provide little support for a child's well-being and education. The Committee on Economic Development concludes that both the school and family have become too frail to handle these tasks, and suggests that the combined efforts of many groups—including schools, businesses, community organizations, and governmental institutions at all levels—will be required.

Efforts to raise the standards of the schools in general may be in conflict with efforts to deal with the particular problems of the underclass. "Increasing concern about the overall quality of the nation's schools has altered federal and state education policy priorities, and this shift has brought a lessening of federal support, an increase in state-level initiatives, and new policies aimed more toward improving the education system generally than at solving the problems of the poorest urban schools."[1]

Many programs that do target the underclass focus on early childhood programs like Head Start, social support programs, cooperative partnerships with external institutions, and efforts to increase the effectiveness of schools, their curricula, and teachers' instructional skills.

Reference

1. Oakes, Jeannie, *Improving Inner-City Schools: Current Directions in Urban District Reform* (Santa Monica, California: RAND Corporation, October 1987) p. v.

- Increases in the minority share of the school-age population.
- Increases in the percentage of children living in poverty.
- Increases in the percentage of children who live in single-parent families for some or all of their childhood.
- Growth in the percentage of children born to unwed mothers—particularly in minority populations.
- Growth in the number of children whose mothers work outside the home.

Race, Ethnicity, and Poverty

Historically, blacks and Hispanics have had much higher rates of poverty, less stable family lives, lower educational attainment, and a more tenuous labor force attachment than white non-Hispanic Americans. In 1988, 44 percent of

black and 38 percent of Hispanic children under age 18 were living below poverty, compared to 15 percent of white children.[7]

Children from these disadvantaged minorities are more likely to be at risk of educational failure.[8] Although there is tremendous variation within racial and ethnic groups, in general, minority children are more likely to perform poorly on cognitive measures, to have attendance problems, to present disciplinary problems in school, to have poor health, to have learning disabilities, to use illegal drugs and alcohol, to become pregnant, and to drop out of school.

Because of relatively higher minority birth rates and increasing immigration, the share of minority children in the U.S. is increasing rapidly. In 1970, 13.5 percent of the school-age population (aged 5 to 17) was black. By 1985, it reached 14.9 percent and demographers project an increase to about 16 percent by the year 2000. The Hispanic population is increasing even more rapidly. In 1985, 9.6 percent of the school-age population was Hispanic, and the Hispanic share could reach 16 percent by 2000. Because white non-Hispanics are growing more slowly than other groups, their share of the total school-age population will decrease from about 73 percent in 1985 to around 66 percent by 2000.[9]

The size and proportion of minority enrollment varies tremendously by state and even more dramatically among metropolitan areas. California is the most ethnically diverse state; in 1986, only 54 percent of the public elementary and secondary students were white non-Hispanics, while 9 percent were black, 28 percent Hispanic, 9 percent Asian and Pacific Islander, and 1 percent American Indian (see Table 2). Due to continuing immigration from Asia and higher fertility among Hispanic women, the share of Asians and Hispanics is expected to increase in the coming decades.

Reflecting the general racial and ethnic makeup of state populations, the southern states tend to have the largest proportion of black students, the southwestern states the largest proportion of Hispanics. In 1986, black children accounted for 56 percent of the public elementary and secondary enrollment in Mississippi, 45 percent in South Carolina, 41 percent in Louisiana, 38 percent in Georgia, and 37 percent in Alabama. Blacks made up roughly one-quarter to one-third of the public enrollment in seven other states (Arkansas, Delaware, Florida, Maryland, North Carolina, Tennessee, and Virginia). The proportion of black students in these states is likely to increase because of the movement of blacks into the South from other regions. The proportion of American blacks living in a southern state increased from 52 to 56 percent between 1980 and 1988.[10]

Many central city school districts are overwhelmingly black. Over several decades, the movement of white and more recently black middle-class families from cities to the suburbs has served to concentrate poor minority children in central cities. In 1986, 91 percent of public school children in the District of Columbia were black, as were 88 percent of students in Detroit in 1989. In the New York City public schools, 38 percent of the 1988 enrollment was black. The racial makeup of the school-age population in many cities is different from that of the general population, a reflection of the young age distribution of minority residents who make up a disproportionate share of central city populations.

Nearly 80 percent of the U.S. Hispanic population is concentrated in only 9 states, and these same states have the largest percentage of Hispanics in their schools. As a percentage of total 1986 enrollment, the Hispanic share is highest in New Mexico (45 percent), Texas (33 percent), California (28 percent), Arizona (26 percent), Colorado (14 percent), and New York (12 percent). In the San Antonio, Texas, Independent

Table 2. State Enrollment by Race/Ethnic Group, 1986*

	1986 Enrollment (in thousands)	Percent distribution by race and ethnic group					
		Total	White Non-Hispanic	Black	Hispanic	Asian and Pacific Islander	Amer. Indian/ Alaskan Native
United States	39,837	100	70	16	10	3	1
Alabama	734	100	62	37	z	z	1
Alaska	108	100	66	4	2	3	25
Arizona	535	100	62	4	26	1	6
Arkansas	437	100	75	24	z	1	z
California	4,378	100	54	9	28	9	1
Colorado	558	100	79	5	14	2	1
Connecticut	469	100	77	12	9	2	z
Delaware	94	100	68	28	3	1	z
District of Columbia	86	100	4	91	4	1	z
Florida	1,607	100	65	24	10	1	z
Georgia	1,096	100	61	38	1	1	z
Hawaii	165	100	24	2	2	72	z
Idaho	208	100	93	0	5	1	1
Illinois	1,825	100	70	19	9	2	z
Indiana	967	100	89	9	2	1	z
Iowa	481	100	95	3	1	1	z
Kansas	416	100	86	8	4	2	1
Kentucky	643	100	89	10	z	1	z
Louisiana	795	100	57	41	1	1	z
Maine	212	100	98	1	z	1	z
Maryland	676	100	60	35	2	3	z
Massachusetts	834	100	84	7	6	3	z
Michigan	1,682	100	76	20	2	1	1
Minnesota	711	100	94	2	1	2	2
Mississippi	499	100	44	56	z	z	z
Missouri	801	100	83	15	1	1	z
Montana	153	100	93	0	1	1	6
Nebraska	267	100	91	4	2	1	1
Nevada	161	100	77	10	8	3	2
New Hampshire	164	100	98	1	1	1	z
New Jersey	1,107	100	69	17	11	3	z
New Mexico	282	100	43	2	45	1	9
New York	2,608	100	68	17	12	3	z
North Carolina	1,085	100	68	29	z	1	2
North Dakota	119	100	92	1	1	1	5
Ohio	1,794	100	83	15	1	1	z
Oklahoma	593	100	79	8	2	1	11
Oregon	449	100	90	2	4	2	2
Pennsylvania	1,674	100	84	13	2	1	z
Rhode Island	134	100	88	6	4	2	z
South Carolina	612	100	55	45	z	1	z
South Dakota	125	100	91	1	1	1	6
Tennessee	818	100	77	23	z	1	z
Texas	3,210	100	51	14	33	2	z
Utah	416	100	94	z	3	2	2
Vermont	92	100	98	z	z	1	1
Virginia	975	100	73	24	1	3	z
Washington	761	100	85	4	4	5	2
West Virginia	352	100	96	4	z	z	z
Wisconsin	768	100	87	9	2	2	1
Wyoming	101	100	91	1	6	1	2

*Public elementary and secondary schools
z = less than 0.5 percent
Source: National Center for Education Statistics, *Digest of Education Statistics, 1989.*

School District, Hispanics made up 81 percent of total enrollment in 1989, and in the New York City Schools in 1988, 34 percent.

There has also been a large increase in the number of Asian school-age children since the late 1970s primarily due to immigration from Southeast Asian countries, although the numbers are small relative to blacks and Hispanics. Between 1976 and 1986, Asian student enrollment in public schools increased from 535,000 to over 1 million. Although Asian students accounted for only 2.8 percent of the 1986 national enrollment, they are a major presence in some metropolitan areas. In Arlington, Virginia, for example, an influx of immigrants increased the enrollment of Asian students fourfold between 1970 and 1985. The Asian share of the student body rose from 1.9 to 14.6 percent over that time period, although it later declined, to 12 percent in 1988.[11] In San Francisco, 47 percent of the public school children were Asian or Pacific Islander in December 1989. The largest subgroups of Asian students in that city were Chinese (24 percent) and Filipino (13 percent).[12]

A large share of Hispanic, Asian, or other immigrants usually means a large share of non-English-speaking students. In the Los Angeles Unified School District in 1987, 93 different languages were spoken among the student body. In three area high schools (Grant, Belmont, and Hollywood), at least 21 languages were represented. In 1989, 38 percent of the elementary students in the Los Angeles County public schools were enrolled in English as a Second Language (ESL) classes. In Arlington, Virginia, about 16 percent of the school children were enrolled in ESL classes in 1989. Not only are special language courses costly, but ESL children miss out on some proportion of the regular classroom instruction while they are in language class.

Trends in Family Life

All too frequently teachers must serve as "parent surrogates" to children in their charge for just a few hours a day. Some of the recent trends in family life—increases in single-parent families and in out-of-wedlock births—are not necessarily supportive of the development and education of our youth. The increase in the proportion of children whose mothers work outside the home has also placed strains on the educational system.

Single-Parent Families. More children than ever before are living in single-parent families for at least part of their lives. This has important consequences for education because single-parent families are more likely to be headed by a woman and to be poor than families with two parents.

High rates of divorce and marital dissolution, combined with relatively greater fertility declines among married than unmarried women,[13] have increased the share of children living with only one parent, usually the mother. From 1970 to 1985, the share of children under 18 living with only one parent more than doubled, from 11.9 to 24.3 percent. Among white children under age 18 in 1988, 18.9 percent lived in single-parent families; among Hispanics, 30.2 percent; and over one-half (54.1 percent) of black children, lived with a single parent, 51 percent with their mother (see Table 3). Also in 1988, 45 percent of the families with children headed by a woman were living in poverty, compared to only about 7 percent of married-couple families with children.

Teenage Parents and Out-of-Wedlock Births. Both the rates of birth and number of births to teenage mothers have declined since the 1950s; however, the share of teen births to unmarried women has increased in recent decades. Among younger teens (15 to 17), birth rates

Table 3. American Children in Single-Parent Families by Race, 1988

	Total		White		Black		Hispanic[1]	
	Number (millions)	Percent	Number (millions)	Percent	Number (millions)	Percent	Number (millions)	Percent
Total children under 18	63.2	100.0	51.0	100.0	9.7	100.0	6.8	100.0
Living with:								
Two parents	45.9	72.7	40.3	78.9	3.7	38.6	4.5	66.3
One parent	15.3	24.3	9.6	18.9	5.2	54.1	2.0	30.2
Mother only	13.5	21.4	8.2	16.0	5.0	51.1	1.8	27.2
Father only	1.8	2.9	1.5	2.9	0.3	3.0	0.2	3.0
Other arrangements	1.9	3.0	1.1	2.2	0.7	7.4	0.2	3.6

[1]Hispanics may be of any race.

Source: U.S. Bureau of the Census, "Marital Status and Living Arrangements: March 1988," *Current Population Reports*, Series P-20, No. 433 (Washington, D.C.: March 1988).

declined by 31 percent, and among older teens (18 and 19), by nearly 49 percent between 1955 and 1986.[14] The aging of the huge baby boom population has reduced the share of all births to teenage mothers. In 1970, when the bulk of the baby boom was in its teen years, 17.6 percent of all births were to teens; by 1985, when the baby bust generation began to enter its teens, that figure had declined to 12.7 percent.[15] However, the birth rates for unmarried teenagers have increased in the 1980s, as they have for unmarried women of all ages.

The problems of teenage childbearing are multi-faceted. The unmarried teenage mother is far more likely to drop out of school or not continue beyond high school and to spend more of her life as a single parent.[16] Compared to those who wait to begin families, the teen mother is economically and socially disadvantaged from the start. The relative disadvantage of teen mothers has widened over time because, on average, today's young women go to school longer, enter the labor force when they leave school, and stay in the labor force through their childrearing years.

From the child's perspective, the disadvantages are particularly distressing. The teen mother is less likely to have well-developed parenting skills and the child is more likely to suffer all the consequences of a disadvantaged childhood (poverty, inadequate access to health care, a lack of positive role models, or a lack of parental guidance). These children are more likely to live in poverty as adults, perpetuating the cycle.

Working Mothers. The share of mothers who work outside the home has increased greatly in recent decades, yet the education-related effects on a child of having a working mother are unclear. In 1975, 45 percent of mothers with children under 18 were in the labor force, but by 1987, 64 percent were.[17] Among married women (with spouse present) whose youngest child is under age 6, the rate of labor force participation increased from 18.6 percent in 1960 to 57.1 percent in 1988.[18]

The research findings are inconsistent on whether maternal employment helps or hinders cognitive development and social maturation of children in schools.[19] However, the increase in working mothers clearly has expanded the need for child care before and after school hours. Many school systems have responded to the demand by incorporating before and after school child-care programs, often right on school grounds. But most communities suffer

Box 2. Growth of Preschool Education

The number and percentage of children in preschool programs has risen dramatically in the last three decades. In 1965, only 10.6 percent of 3- and 4-year-olds were enrolled in school; by 1986 that figure had risen to 38.9 percent. While approximately the same share of whites and blacks were enrolled in preschool in 1986 (39.1 and 38.2 percent, respectively), only 28.7 percent of Hispanic children this age were in school.[1]

Concern about the importance of early childhood education stems partly from the social need to provide care for children of working mothers, but even more from the realization that the children who have had preschool programs perform better in elementary school. Beliefs that early interventions could avert early educational problems for many disadvantaged children led to strong federal interest in programs like Head Start.

Ironically, although many believe that preschool programs are most effective for the disadvantaged population, preschool enrollment rates have been consistently higher among more affluent families, as the accompanying table shows. Only about one-third of the disadvantaged children eligible for Head Start are enrolled.

At this time, most preschool programs are privately run. However, because of recent school reform efforts, more states are providing public preschool programs for disadvantaged children, particularly 4-year-olds.

As we enter the 1990s, there is considerable debate about the most appropriate types of programs for preschool children. The developmental approach is based on the natural learning behaviors of young children. Teaching methods stress learning social skills, self-confidence, and positive educational attitudes through play. By contrast, the cognitive approach adapts teaching methods developed for older children for the preschool level: young children are taught through lessons at desks, testing, homework, and strict discipline. Current thinking favors the developmental approach, although a wide variety of programs are available in different settings for young children.

Reference

1. U.S. Bureau of the Census, "School Enrollment—Social and Economic Characteristics of the Students: October 1986," *Current Population Reports*, Series P-20, No. 429 (Washington, D.C.: August 1988).

Percent of 3- and 4-Year-Olds Enrolled in Preschool, by Family Income and Race, 1986

	Race			
	White		Black	
Family Income	Age 3	Age 4	Age 3	Age 4
Less than $10,000	14.8	34.7	24.8	40.0
$10,000–$19,999	17.4	57.9	36.8	47.8
$20,000 or more	37.9	57.8	51.5	47.8

Source: Pendleton, Audrey, "Preschool Enrollment: Trends and Implications," *Condition of Education: 1988* (Washington, D.C.: National Center for Education Statistics, 1988) p. 127.

from a lack of affordable, high-quality child care. The need is most acute for preschool-age children. In the fall of 1987, only 10.5 percent of public elementary schools offered any prekindergarten programs.[20]

A growing number of children simply go home to an empty house—the "latchkey" children—or are cared for by an older sibling. In 1984, an estimated 2 million children between the ages of 5 and 14 cared for themselves after school.[21]

Teachers

The quality of instruction in the nation's schools in recent years may affect the ability of the U.S. labor force to compete in international markets. In many respects, the teaching profession today is better off than it ever has been. However, a great deal of public concern has centered on the teachers: the aging of the teaching pool, the supply of minority teachers, salaries, evaluating teachers, and improving the status of the profession. Above all, there may be a shortage of qualified teachers over the next two decades.

Since the 1950s, the number of teachers in the U.S. has increased nearly every year; the trend has been the same in public and private schools, and at both the elementary and secondary levels. Between 1955 and 1970, when the large baby boom cohort was of school age, the number of teachers grew from 1.3 million to 2.3 million, and peaked at 2.5 million in 1977. Even after student enrollments began to decline, the number of teachers grew modestly, hovering around 2.5 million between 1976 and 1984, and 2.6 million between 1985 and 1988.

Public school teaching has long been dominated by women. In 1986, 69 percent of public school teachers were women, nearly the same proportion as in 1966. However, in part because fewer teachers entered the profession from the late 1970s to the early 1980s, when student enrollments were declining, teachers in 1986 are older and have more years of experience than did teachers two decades ago. The average age for teachers in 1986 was 41 compared to 36 in 1966. And, while teachers in 1966 had just 8 years teaching experience, on average, teachers in 1986 had 15 years experience.

Table 4. Average Annual Salaries of Teachers in U.S. Public Elementary and Secondary Schools, 1959–1988

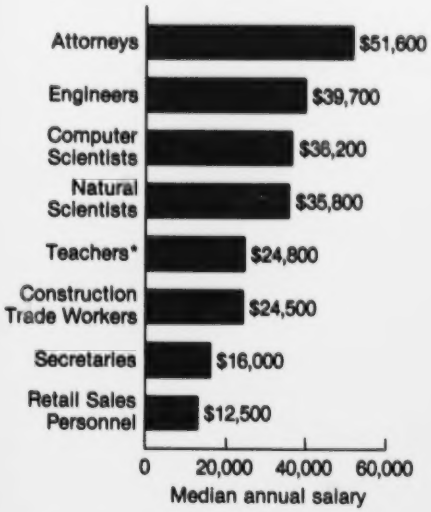
Year	Current dollars	Constant 1987–88 dollars
1959–60	$ 4,995	$19,693
1969–70	8,635	26,453
1974–75	11,690	26,037
1979–80	15,970	23,830
1980–81	17,644	23,595
1981–82	19,274	23,725
1982–83	20,693	24,425
1983–84	21,917	24,949
1984–85	23,595	25,840
1985–86	25,201	26,825
1986–87	26,551	27,658
1987–88	28,044	28,044

Source: National Education Association estimates cited in National Center for Education Statistics, *Digest of Education Statistics, 1989*.

The educational levels of teachers have increased markedly over the past two decades. In 1966, less than one-quarter of the teachers had a master's degree, while by 1986, just over one-half held an advanced degree.

Accounting for inflation, average teacher salaries fell 14 percent between 1972–73 and 1980–81. Since 1982, salaries improved, reaching an average of $28,044 annually in 1987–88 (see Table 4). Compared to other occupations, however, teachers still are relatively poorly paid. They earn more than secretaries, but less than computer scientists (see Figure 3).

Figure 3. Median Annual Salaries for Selected Occupations, 1987



*Elementary and secondary school teachers

Source: U.S. Bureau of Labor Statistics and U.S. Bureau of the Census.

Racial and Ethnic Makeup

The dominance of whites in the teaching field actually increased from 88 percent in 1971 to 90 percent in 1986, counter to the trend in the racial makeup of the students. The share of black teachers dropped from 8.1 to 6.9 percent over the same time period. About 3.4 percent of the public school teachers in 1986 were of other races, primarily Asian. Census Bureau estimates show that the share of Hispanics (of all races) grew from about 3.6 to 5.1 percent of teachers between 1980 and 1987.[22]

In individual districts, the minority share of teachers often is lower than that of the students. In Detroit, for example, in 1988, 88 percent of the public school children were black, while only 60 percent of the teachers were black.

The low participation of minorities in teaching has several explanations. Minorities are less likely to attend and complete college, and a college degree is a prerequisite for entering the teaching field. In the past, racial barriers probably prevented many of those who did complete college from teaching in white-dominated school districts. More recently, career opportunities for college-educated minorities have opened in other fields, often with higher salaries and greater advancement potential than teaching. The number of minority college graduates entering teaching has declined sharply.[23]

The issues regarding the impact of minority teachers in the classroom are complex. Some advocates believe minority students should have minority teachers, but clearly not all can unless the number of minority students in teaching rises dramatically. Many agree that in the multi-cultural society of the U.S., it is beneficial for *all* students—regardless of race or ethnic heritage—to be exposed during their early educational careers to teachers and role models from a variety of racial, ethnic, and cultural backgrounds.

There is no conclusive evidence that minority teachers can teach minority students any more successfully than non-minority teachers, although there is evidence that teachers of high socioeconomic status (regardless of race) have greater difficulty teaching poor or disadvantaged minority students.[24] There is evidence that teachers with high verbal ability, regardless of their race, have a positive influence on low-income minority students.[25]

Will There be a Teacher Shortage?

Widespread concern about an impending teacher shortage stems from five broad trends. First, the teaching work

force is aging, and more teachers will be nearing retirement age around the turn of the century. Census Bureau data show that the percentage of teachers in the 40 to 49 age group jumped from 22 to 32 percent between 1980 and 1987, while the percentage in ages 22 to 29 dwindled, from 24 to only 15 percent. Second, a large share of teachers appear to be contemplating leaving their profession.[26] Third, reports of current teacher shortages in specific fields—particularly in math, the sciences, and technology—raise the specter of severe shortages in critical curriculum areas. Fourth, fewer college students overall are entering teaching; from a peak of 194,229 bachelor's degrees in education awarded in 1972–73, only 87,221 were awarded in 1985–86, a decline of more than 55 percent. However, that number seems to have increased in the late-1980s.[27] Finally, while all of these factors suggest declining numbers of teachers in the future, the number of students, as shown earlier, is certain to increase.

Although the National Center for Education Statistics projects that the supply of new teacher graduates will not satisfy future demand, national surveys in the late 1980s reported relatively few unfilled vacancies.[28] The supply of new teachers is not limited to the number of college students majoring in education. New teachers may come from students majoring in other fields, people who have previously left the field, and people changing professions. The future supply of teachers will also depend on policy-related factors that control access to the field and encourage teachers not to seek other professions. And, since two-thirds of elementary and secondary teachers are women, expansion of opportunities for women in other professions may entice many would-be teachers into more lucrative careers.

Ellen Galinsky

The supply of minority teachers falls far below the number of minority students.

Increasing Costs of Education

Many of the demographic trends that have shifted the number and composition of students within states and individual school districts have also placed severe strains on the management of the school systems. Because schools are governed and financed at the state and local level, changes in an area's population can spell trouble for a district's education budget. These demographic changes, along with the push for education reforms, financial constraints, and other factors, are changing the old patterns of governance, possibly weakening the American tradition of local control over public schools.

Nationally, estimated expenditures for elementary and secondary education were approximately $199 billion in 1988–89, up from $165 billion (in constant 1988–89 dollars) ten years earlier, an increase of 21 percent. Per pupil expenditures were estimated to be $4,645 in 1987–88. Over the past decade, expenditures in constant dollars have increased about 25 percent, but all the increase began in 1983, during the period of emphasis on school reform and improvement (see Table 5).

Table 5. Total Education Expenditure per Pupil, 1978–1988

School year ending	Total expenditure per pupil[1]	
	Current dollars	Constant 1986–87[2] dollars
1978	$2,002	$3,555
1979	2,210	3,589
1980	2,491	3,569
1981	2,762	3,547
1982	2,997	3,542
1983	3,230	3,661
1984	3,500	3,825
1985	3,760	3,954
1986	4,070	4,160
1987	4,365	4,365
1988	4,645	4,460

[1]Total expenditure per pupil in average daily attendance in public elementary and secondary schools. Total expenditure includes all current expenditures, capital outlay, and interest on school debt.

[2]Based on the Consumer Price Index, adjusted to a school-year basis.

Note: Figures for 1981–1988 are estimates.

Source: National Center for Education Statistics, *The Condition of Education, 1989 Edition*, Vol. 1 (Washington, D.C.: 1989).

Expenditures for elementary and secondary education represent a small proportion of spending by the federal government, but the largest single item for state and local governments. In 1986, education at all levels accounted for 29 percent of total state and local spending; elementary/secondary education accounted for 20 percent. The second highest budget item, public welfare, consumed only 10 percent of state and local spending in 1986.[29]

Like many other aspects of education, per pupil expenditures vary greatly among the states and among school districts, even within the same state or same metropolitan area. Excluding Alaska, where the high cost of living and a sparse population drive up costs, expenditure per pupil in 1986–87 ranged from $6,497 in New York to $2,350 in Mississippi.[30]

The majority of school district budgets are spent on salaries and benefits, primarily for teachers. Increases in per pupil expenditures in the past two decades have been driven largely by decreases in the pupil-teacher ratio—from 24.0 in 1967 to 17.4 in 1988.[31]

In order to attract and keep skilled teachers, personnel costs could rise more rapidly in the near future. Also, the aging of the teachers means that more will be entering retirement after 2000, drawing down pension funds.

Programs for students with special needs, especially handicapped students, have contributed to higher costs. The 1975 Education for All Handicapped Children Act required the provision of free and appropriate educational services to all handicapped persons ages 5 to 21. This act increased expenditures in two ways.

First, it brought into the schools students who had not been served before.[32] The number of students served by federally-supported education programs for the handicapped increased from 3.7 to 4.4 million between 1977 and 1988 (or from 8 to 11 percent of all students), due primarily to the growth in the number of students who were classified as learning disabled.[33]

Second, the cost of such special services are much higher than for regular education programs. In 1985–86, the average expenditure in public and private schools to educate a handicapped

child was $6,335 compared to $2,780 for other students.[34]

Current demographic trends, especially changes in the composition of homeowners could weaken taxpayer support for schools in many communities. In many states, school districts depend upon local sources for one-third to one-half of their operating funds. In areas with declining enrollments, homeowners are often critical of the ever-increasing educational costs. In urban areas, homeowners are more likely to be childless, non-minority, older, and wealthier than the students' families. In the Sunbelt states, the rapid increase of older white residents, due to migration from the northeastern and north central states, is running counter to the increase in the Hispanic and black school-age population.

The aging of the national population means not only that a smaller proportion of the residents has a direct stake in the public schools, but also that the competition for funds from other sectors, such as health, may become more severe. The elderly, who traditionally have high rates of home ownership and of voting—may feel little commitment to the young families and children who consume such a large share of tax revenues.

In rural areas that have experienced the consolidation of their local school systems into a larger regional unified school districts, a similar loss of taxpayer interest may occur. Because rural populations have become more elderly and poorer over the past decade, they are less able to absorb tax increases.

The public's skepticism about the schools is further fed by reports that student achievement is waning. To some extent this is a result of an increase in the expected level of achievement to meet more rigorous requirements of future jobs. However, there is a real concern that the growing share of minority and poor students who tend to have higher dropout rates and lower academic skills have depressed the overall academic levels in many areas.

Grading Student Performance

Achievement test scores have received a great deal of national attention, although many belittle their validity in measuring academic skills or potential for disadvantaged students. Whatever their drawbacks, test scores remain a convenient report card for schools and students. Scores in the major subject areas have improved only slightly over the past decade, but the differences between blacks, whites, Hispanics, and other students have narrowed. However, large gaps between racial and ethnic groups remain; and the general level of knowledge and skills of American students, as recorded in these assessments, are disturbingly low given the labor force needs of the future.

In recent years, the National Assessment of Educational Progress (NAEP) has provided insight into different dimensions of literacy and into the different skill levels attained by different age, race, and sex groups. The NAEP has found that the reading skills of the

U.S. Department of Labor

The mathematics skills of U.S. students rate below those of most other industrialized countries.

urban disadvantaged population have improved since 1971. But, while there has been real improvement at the low end of the continuum, reading skills among the more advantaged urban students have not advanced.[35]

The plateau in the skills of the middle- and upper-class students, and among the higher performers in the disadvantaged population lead one expert to assert that: "The goal of 12th-grade literacy for all adults must remain only a tantalizingly remote possibility. Some further progress can be made toward improving the skills of students at the lower levels of the distribution. At the upper levels, however, reading skills will be difficult to increase."[36]

In mathematics, student proficiency improved slightly between the early 1970s and late 1980s. Test results indicate, however, that the math capabilities of many students are not adequate for needs in adulthood. One-quarter of 13-year-olds appeared not to possess the skills in whole-number addition, subtraction, multiplication, and division needed for everyday tasks. Nearly half of the 17-year-old students did not possess skills in the most basic algebra and geometry or in using decimals, fractions, and percents; and only 6 percent could solve multi-step problems and use basic algebra.[37] These findings raise concerns about the mathematics skills of the upcoming work force—both for functioning effectively as adults and for contributing to the national economy.

Indeed, international studies confirm such concerns. In a 1988 study of math and science achievement of 13-year-old students in six countries, the United States performed below (or at the lowest level of) all other countries at all levels of mathematical ability. That is, a smaller share of U.S. children were able to add and subtract, to solve simple problems, to solve two-step problems, to understand concepts, or to interpret data than children in Korea, Spain, the United Kingdom, Ireland, and a number of the Canadian provinces.[38]

Science test scores in the U.S. declined sharply in the 1970s (much more so for older than for younger students), but recovered somewhat in the 1980s. By 1986, 9-year-olds had regained the levels of proficiency shown in 1970, but despite recent gains, 17-year-old students were still well below their 1970 levels. A majority of these older students were unable to analyze scientific procedures and data. While about 40 percent of these students demonstrated some moderate understanding of science, only 7 percent showed any level of sophistication.[39]

Internationally, the U.S. is not at the bottom of the countries tested in science abilities: of seven countries tested, Ireland and two out of six Canadian provinces scored lower. Nevertheless, the U.S. scored well below those at the top, Korea and British Columbia (Canada).[40]

Racial and Ethnic Differences

Test scores vary widely among racial and ethnic groups. Among 17-year-olds, for example, 89 percent of whites performed at an "intermediate" level or above on a reading proficiency assessment in 1988, compared to 76 percent of blacks and 73 percent of Hispanics. About 46 percent of whites performed at the "adept" level, compared to only 26 percent of blacks and 24 percent of Hispanics. Similar racial/ethnic differences were found among 9- and 13-year-old students. These differences have diminished in recent years. In 1975, 86 percent of whites, 42 percent of blacks, and 52 percent of Hispanics scored in the "intermediate" level; however the gaps remain quite large.[41]

Similar differences are found in math and science scores. Among 17-year-olds, 58 percent of white students could complete moderately-complex mathematical procedures and reasoning in a 1985–86 national assessment by NAEP, compared to only 22 percent of blacks and 27 percent of Hispanics. The

Box 3. Literacy Among Young Adults

Relatively few Americans are utterly illiterate: thus, it makes little sense to address public concern at the level of illiteracy alone. Rather, recent studies have focused on the distribution of the population across a range of performance on a variety of skills. They measure functional performance in a society that demands literate functioning on several dimensions.

In 1985, the National Assessment of Educational Progress assessed the literacy skills of young adults, aged 21 to 25.[1] The study measured proficiency on a number of tasks that simulate those encountered in various adult settings; the study identified three dimensions of functional literacy:

- *Prose*—reading and interpreting prose (as in newspaper articles, magazines, and books),
- *Document*—identifying and using information located in documents (such as in forms, tables, charts, and indexes), and
- *Quantitative*—applying numerical operations to information contained in printed material (such as a menu, a checkbook, or an advertisement).

For each dimension, respondents were ranked on a scale indicating ability to perform a range of tasks from simple to complex. Young adults performed quite well on tasks at the lower end of all three of the scales. But as tasks increased in complexity, fewer adults could perform them. Only a relatively small percentage could perform at levels considered to be more complex and challenging. Perhaps more disturbing, however, were the differences in literacy skills among different populations. Literacy skills were clearly related to background characteristics such as parental education and occupation, and access to books and magazines at home during childhood. Similarly, amount of education and current reading and other literacy practices affected skills. But even after these differences were accounted for, the two major factors affecting literacy performance were the respondent's race/ethnicity and level of education. On average, black young adults performed significantly below their white peers, and Hispanics performed at a level intermediate to whites and blacks. When demographic, education, and literacy practice variables were held constant, the differences between black and white young adults were reduced by about one-fourth, while differences between black and Hispanic youths increased. Some social scientists argue that some less-tangible aspect of socioeconomic status may explain the persistent differences in literacy levels among racial and ethnic groups.

Reference

1. Kirsch, Irwin S. and Ann Jungeblut, *Literacy: Profiles of America's Young Adults*, National Assessment of Education Progress (Princeton, New Jersey: Educational Testing Service, 1987).

1985–86 science assessment yielded similar results. The lower achievement in science among blacks and Hispanics has been persistent over time, and appears in all age groups.

Discrepancies recorded in elementary and secondary school persist into adulthood. Tests of young adult literacy show that white non-Hispanics have the highest average skill levels, followed by Asians and Native Americans, then Hispanics, and then blacks. And, "while the score advantages of white young adults are due, in part, to their greater school-

ing attainment, large differences remain between white and black young adults even when controlling for years of schooling completed."[42]

There is about a four-year difference in literacy abilities between blacks and whites with the same number of years of schooling. On average, blacks who have completed four years of college perform at about the same level as white high school graduates. When researchers in a recent study controlled for students' background, demographics, education, and literacy practices, "only about one-third of the race/ethnicity difference disappear; the remaining differences are still quite large."[43] These trends suggest serious shortcomings in the education of minorities in the United States, and do not bode well for the employment opportunities of these disadvantaged populations.

Asian students, on average, tend to score well on standardized tests. For every year between 1975 and 1987, Asian Americans scored higher than whites and other major ethnic groups on the mathematics section of the Scholastic Aptitude Tests (SAT) taken by college-bound students. In 1988, a greater share of Asian eighth graders scored in the top one-quarter on achievement tests in history, mathematics, reading, and science than did blacks, Hispanics, and American Indians. They also scored higher than white non-Hispanics in math.[44]

With the proportion of minorities in American schools increasing, any attempt to raise the overall skill levels of American students will have to begin by addressing the problems of minority achievement.

Dropping Out of School

Along with lagging achievement test scores, the large number of youths who fail to finish high school has concerned the American public and policymakers. High school dropouts are more closely associated with higher crime, drug use, and unemployment rates than those who go on to finish school. In short, they are more likely to become a drain rather than a contributor to society. Furthermore, the number of jobs available to high school dropouts is likely to decline from about 18 to 13 percent during the last decade of the century.

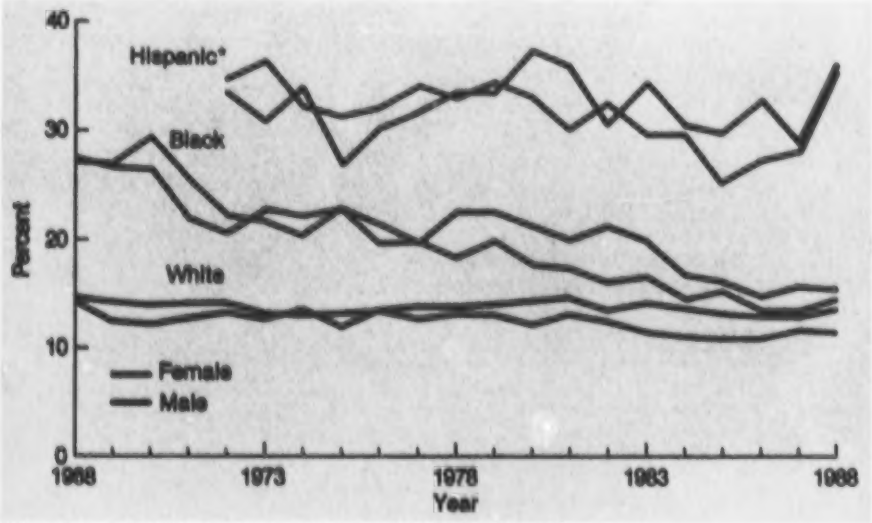
ACTION/VISTA

The gap has narrowed, but the reading skills of minorities lag behind those of other students.

Dropout rates for U.S. students have fallen over the past 20 years, particularly for blacks (see Figure 4). The percentage of black youth ages 16 to 24 who are not in school and have not yet completed high school declined from 27 percent in 1968 to 15 percent in 1988, a notable achievement. For whites, the dropout rate fell from 15 percent in 1968 to 13 percent in 1988. The rates for Hispanics, however, have remained high throughout the period. In 1988, 36 percent of Hispanics between ages 16 and 24 had not finished high school.[45]

Even as dropout rates improve overall—especially among blacks—rates have remained high for blacks and Hispanics from low-income and single-

Figure 4. Status Dropout Rate by Race/Ethnicity and Sex: 1968–1988



*Hispanics may be of any race; separate data not available before 1972.

Note: The *Status Dropout Rate* is the proportion of youth, ages 16 to 24, who have not completed high school and are not currently enrolled.

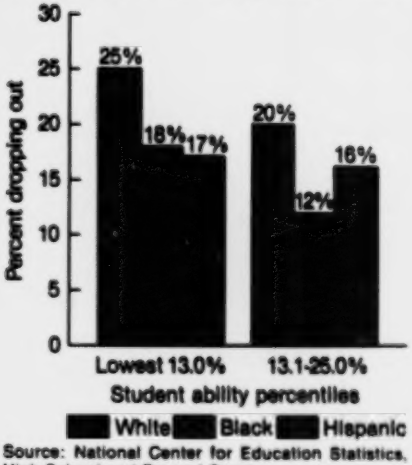
Source: Frase, Mary, "Dropout Rates in the United States: 1988," *National Center for Education Statistics: Analysis Report* (Washington, D.C.: U.S. Department of Education, September 1989).

parent families. Some evidence shows that the dropout problem may be getting much worse in the poorest neighborhoods.[46] Although the data are not strictly comparable, estimated dropout rates in some urban areas exceed the national averages by three or four times.[47] Deepening concentrations of poverty in urban neighborhoods may be associated with dramatic increases in dropout rates in inner city schools.[48]

The higher dropout rates among blacks and Hispanics are largely explained by underlying differences in socioeconomic or family background characteristics, ability test scores, or location of residence. "[L]arge dropout-rate differences among whites, blacks, and Hispanics (although not between the sexes) diminish, vanish, or are even reversed when personal and family background factors are taken into account."[49]

In fact, among students with low test scores, minority students are less likely than whites to drop out (see Figure 5). Overall, 19 percent of the students whose scores were in the bottom quartile (three-fourths of the students had higher scores) dropped out of high school; 22 percent of all whites, 17 percent of all Hispanics, and 16 percent of

Figure 5. Percent of Low-Performing Students Who Dropped Out of School by Race/Ethnic Group, 1980–1982



Source: National Center for Education Statistics, High School and Beyond Survey.

all blacks in the bottom quartile dropped out. Similarly, blacks and whites living in the suburbs do not differ from one another in their dropout rates, nor do those living in central cities.

Many dropouts later return to finish school or get a high school equivalency degree. Among the 1980 sophomore class, who would have graduated in 1982, nearly half (46 percent) of the students who dropped out before finishing their senior year earned a diploma or an equivalency certificate within four years of their expected graduation date. About one-third of those earned a high school diploma and the other two-thirds earned some type of equivalency credential. Generally, dropouts who finished within one year of their expected graduation date were the most likely to earn high school diplomas (45 percent) while those who delayed longer were more likely to obtain an equivalency credential. In general, those who returned to finish school after dropping out resembled those who did not drop out—that is, they were more likely to be white, have a higher socioeconomic status, earn better grades, and have higher test scores than other dropouts.

In 1988, 701,000 people took the General Education Development (GED) examination, and 72 percent passed it.[50] While there has been criticism that GED-takers can pass the test with 6th-grade reading skills and that few GED students who go on to college graduate,[51] there are few differences in employment and earnings patterns between dropouts who later earn a high school diploma and those who complete a GED.[52]

Are Some Schools Better?

Educators have been challenged to find ways to improve student performance and prevent students from dropping out of school. However, they must begin by identifying factors that can explain the differences in student achievement, particularly factors that might be enhanced through education reforms or shifts in policies.

The Equality of Educational Opportunity Report (better known as the Coleman Report) in 1966 found that the schools children attended were poor predictors of which students were likely to be high achievers. What did matter were students' background and socioeconomic status.[53]

For many years this finding was misinterpreted to mean that schooling overall has little effect on how much students learn. Subsequent research clearly confirms that family background variables are powerful predictors of school success. Students from families where the parents are well-educated, education is valued, and intellectual pursuit encouraged are more likely to do well in school. But schooling, too, makes a difference.

Staying in school and the length of time students spend studying can have a powerful impact on learning. Studies conducted during summer months and teacher strikes have shown that inner city and minority youth are especially prone to sharp drops in learning skills and knowledge when not in school.[54]

Differences among schools explain from one-quarter to one-third of the total differences in student achievement, according to recent studies. The quality of schools may have an even greater impact on the rate at which students gain knowledge or skills; up to 45 or 50 percent of the variability in student learning has been attributed to differences in schools.[55]

Even though policymakers and researchers agree that schools can make a difference, there is little agreement about which school characteristics matter most. Expenditure levels have proved a weak indicator of educational quality. No consistent relationship has been found between student performance and four major determinants of expenditures—teacher-pupil ratios, teacher salaries, teacher experience, and teacher education.[56] Nonetheless, most local communities have supported increases in education expenditures to improve their schools. American taxpayer's support for public schooling has more than doubled since 1930, using an index calculated by the Department of Education.[57]

Gallery of Images

School quality and student achievement often reflect the wealth of parents and community.

One of the problems with estimating the impact of expenditures and other resources on student outcomes is the strong positive relationship between students' socioeconomic characteristics within school and the school's resource levels, including expenditures. Affluent parents try to ensure that their child gets a good education by considering the reputation of local schools when choosing a place to live. Even if less affluent parents gave as much consideration to the quality of schools when choosing their residence (and the research indicates they do not[58]), they could not afford to move to the neighborhoods with the best schools.

Aside from neighborhood, are there specific factors of a school environment that foster high achievement? Many cite class size, school size, and a less tangible variable, "school climate," as important factors, yet there is no consistent evidence of a relationship between these variables and student achievement.

Between 1961 and 1986, the median number of pupils per class declined from 30 to 24 for elementary schools and from 27 to 22 for secondary students with no related increase in student achievement.[59] Research suggests that little improvement in student performance can be expected until class sizes are reduced to as few as 15 pupils per class on average. For most districts this would be prohibitively costly.

A related approach is intensive tutoring outside of class for youth with special needs in targeted curriculum areas. The experience of Japan lends some support for this idea. The average 8th grade math class in the United States has 26 pupils, compared to 41 students in Japan, yet Japanese students score

higher than American students on science and math achievement tests. The Japanese advantage may be explained, in part, by use of special tutors and intensive study courses that supplement the regular school instruction of Japanese students.

The size of a school's total enrollment also has been blamed for academic decline, particularly in large urban high schools.[60] However, because most urban high schools are larger than rural schools, it is difficult to isolate the effects of the urban environment from size of the enrollment. A recent study in California found that large schools in *affluent neighborhoods* produced high-performing students.

Many teachers advocate "personal environments" for disadvantaged students in the belief that marginal students fare better in small schools. For school administrators, however, the issue is less clear. Economic forces, including tax laws, favor the construction of large schools, particularly when the school board wants a full-size gymnasium and a respectable school library. The most powerful attraction of a large high school is its greater staff specialization, and, consequently, greater diversity of course offerings.

Yet large schools also are more likely to have a greater incidence of staff problems as perceived by principals (for example, absenteeism and lack of interest), more student discipline problems, and more tracking.[61] In urban high schools, nearly one-half of the potential learning time can be lost due to absence, lateness, and inattention.[62]

Differences Within Schools

Within the same school, differences in teachers' expectations can affect the manner in which particular children receive encouragement and recognition, the total amount of instruction actually delivered to different groups of children, the ability group or curriculum track to which a child is assigned, and, not least of all, the aspirations of the child. As early as the first grade, teachers' expectations can have a greater impact on learning than the children's background and family variables.[63]

Junior high and high school track assignments have a powerful effect on student aspirations and the likelihood of entering college.[64] However, in general, academic tracking at the secondary level has only a modest effect on the amount students learn. Because minorities are disproportionately represented in vocational and lower-level track courses, many experts have suspected that tracking perpetuates lower academic achievement among blacks and Hispanics. However, tracking assignments and the types of courses chosen by minority students may contribute to, but cannot fully explain, racial or ethnic differences in school achievement.[65]

The lower achievement among minority students often is manifested early in their school careers and probably results from a variety of factors beginning long before kindergarten. A recent National Science Foundation-funded study of elementary students in Montgomery County, Maryland, found that "nearly half of the county's black and Hispanic students are straggling so badly by the end of elementary school that they cannot keep up with the county's regular math curriculum."[66]

In sum, since the Coleman report in 1966, researchers have learned a great deal about the fragility of school environments, but very little about school characteristics that work invariably across a wide range of conditions.

Finance Reform

Recognition of the link between school location and neighborhood and the quality of education students receive underlies the national movements to reform the way schools are financed.

Box 4: School Governance

In the United States, state governments are responsible for providing education. Although they delegate responsibility for operating schools to local school districts, states regulate a myriad of district activities, from the number of school days per year to graduation requirements, but the extent of regulation varies greatly among the states. In recent years, there has been a trend toward greater state control. At the same time, there has been some movement toward greater decentralization within school districts, granting principals and teachers more power to make decisions about the use of resources and curriculum in their own schools and classrooms.

Each independent school district often has the power to levy taxes and is governed by an elected school board. As of 1987, all but 16 percent were fiscally independent.[1] Nationally, 44 percent of the revenues for public elementary and secondary education were supplied by local sources in 1986–87, while 50 percent came from the states.

The public has a greater and more direct role in the governance of education than in other local government functions. In addition to electing school board members, citizens vote on school tax and bond issues in many areas. Approximately 88 percent of local school boards are elected and the elections tend to be nonpartisan.[2]

Local school districts operate within a federal system, although the federal government supplied only 9 percent of the costs in [illegible]. The limited federal role in elementary and secondary education tends to focus on three areas: (1) research and statistics for policymakers at all levels; (2) funding programs for students with special needs such as the disadvantaged, those with limited English proficiency, and the handicapped; and (3) initiating special programs in areas of national interest. A [illegible] such as reducing school dropout rates.

Consolidation of School Districts

The majority of school districts are small, serving less than 2,500 students. The largest school districts, those serving 25,000 students or more, represent only 1 percent of all districts, but serve more than one-quarter of all students.[3] Minority students tend to be concentrated in the largest school districts and to constitute a large percentage of the district enrollments. In 1986, the 20 largest school districts enrolled one of every four minority students, compared to 1 of every 20 white students.

In this century, the school consolidation movement has greatly reduced the number of school districts. In 1931, there were about 127,500 school districts; in 1948, approximately 100,000. By 1987, there were only about 15,800 local school districts.[4]

The consolidation of school districts is often controversial because it can dilute the power of a local community over the schools. In rural areas consolidation may unite, in a single school district, communities that are geographically far apart, resulting in long bus rides for many of the students.

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Prior to the 1930s, nearly all the funds for public schools came from local sources (see Table 6), with the bulk coming from the local property tax. Consequently, districts with strong property-tax bases could afford better school facilities, more teachers, and higher salaries than districts with weak property-tax bases. (See Box 4).

In the 1930s, new funding formulas were developed which linked the amount of state aid going to each local school district to the district's own ability to finance schools. Under such "equalization" formulas, school districts with weak local tax bases received more state aid per pupil than districts with stronger tax bases. These equalization programs lessened the reliance on locally-raised revenues and increased the role of the states. The state share of education revenues grew from 17 percent in 1930 to 30 percent in 1940, and 39 percent in 1960.

Many of the inequities that had disturbed the earlier reformers persisted into the late 1960s, when another period of reform began. Not only did per pupil expenditures differ widely within states (there were ratios of 4-to-1 or even higher between the lowest and highest spending districts in a state), but minority and poor students often were concentrated in the poorer, low-spending districts. The richest districts, with the highest per pupil expenditures, tended to be in the suburbs.

Reformers pursued a variety of approaches to change state school finance systems: court suits, legislative strategies, and referenda. The court challenges mounted in many states in the 1970s and 1980s produced mixed results. No court ruled against the use of local property taxes to fund public schools. However, several courts ruled as unacceptable school finance systems that produced significant variations in per pupil expenditures, charging that such discrepancies denied equal educational opportunities to children according to where they lived. The changes in population distribution over the past few decades—movement from central cities to the suburbs and from the Rustbelt to the Sunbelt—have only exacerbated the gaps between relatively wealthy and poor districts.

Table 6. Revenue Sources for U.S. Public Elementary and Secondary Schools, 1920–1987

School year ending	Sources		
	Local[1]	State	Federal
	Percent of total		
1920	83.2	16.5	0.3
1930	82.7	16.9	0.4
1940	68.0	30.0	1.8
1950	57.3	39.8	2.9
1960	56.5	39.1	4.4
1970	52.1	39.9	8.0
1975	48.8	42.2	9.0
1976	46.5	44.6	8.9
1977	47.8	43.4	8.8
1978	47.6	43.0	9.4
1979	44.6	45.6	9.8
1980	43.4	46.8	9.8
1981	43.4	47.4	9.2
1982	45.0	47.6	7.4
1983	45.0	47.9	7.1
1984	45.4	47.8	6.8
1985	44.4	48.9	6.6
1986	43.9	49.4	6.7
1987	43.9	49.8	6.4

[1]Includes intermediate sources.

Source: National Center for Education Statistics, *Digest of Education Statistics, 1989.*

From the 1970s to early 1980s, new school finance formulas to reduce expenditure inequalities were adopted in a number of states. These reform efforts and new formulas increased the state share of education funding. In 1978–79, for the first time, the state share of school funding exceeded the local share. By the late 1980s, states were providing about half of all revenues for public elementary and secondary schools.

One concern voiced during court cases and legislative considerations was

S 431

Box 5. The Role of the Courts

The U.S. court system is a major actor in determining what happens in schools. It provides an opportunity to challenge local or state policies or decisions that people feel are unfair or illegal. Perhaps the most visible example has been the issue of racial segregation. The Supreme Court ruled segregation on the basis of race unconstitutional in *Brown v. Board of Education* in 1956. That case outlawed *de jure segregation* (the establishment of separate school systems or schools for blacks and whites by law or explicit school policy). This invalidated laws in many southern states under which black and white students attended separate schools.

However, segregation in the North and West was not de jure, but rather de facto. There were no laws or policies forbidding blacks from attending the same schools as whites, yet blacks and whites tended to go to different schools because they lived in different neighborhoods. Court suits charging *de facto segregation* were filed in many school systems around the country. These cases generally revolved around two questions—was the de facto segregation the result of the actions (or inactions) of public officials? If so, what remedies were necessary and appropriate to redress the situation?

As a result of court challenges, school districts were charged with desegregating their schools through a variety of methods. These included busing children from racially segregated neighborhoods to newly-integrated schools, consolidating city and suburban school districts, creating "magnet schools" (schools with special science laboratories, language classes, or other programs to attract non-minority students), designing new school attendance zones, and combining schools. Some school districts found themselves under the supervision of the courts for long periods of time as courts monitored their compliance with desegregation plans.

School finance was another area in which the courts were asked to redress a perceived wrong. School finance systems in a number of states were ruled unconstitutional under provisions of the state constitution. In other states, new school finance formulas were adopted in order to head off the possibility of a court suit.

Fear of a court suit can lead to inaction as well as action. Recent surveys found that fear of lawsuits (and to a lesser extent, the lack of affordable liability insurance) has caused school districts to restrict or eliminate certain kinds of activities—including physical education, extracurricular activities, vocational classes, science laboratories, sports, field trips, and the use of volunteers.

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Rothman, Robert, "Fear of Lawsuits Spurs Districts to Cut Programs," *Education Week*, Vol. IX, No. 1 (September 6, 1989) pp. 1, 32.

whether increased levels of state funding would lead to greater state control over local school districts. The few studies to date on this issue have shown no consistent relationship between levels of state financing and state control.[67]

However, there is some evidence that the type of aid, rather than the level, may be related to the extent of local discretion. *General aid* has few, if any, restrictions on how local school districts may spend it. *Categorical aid* is for a specific program or purpose, and, as such, carries with it more restrictions on pro-

grams and policies. Categorical aid includes aid for special, compensatory, and bilingual education, programs for gifted and talented students, magnet schools, and small schools. Federal aid is primarily categorical aid, whereas state aid consists primarily of general aid.

Education Reform

In the early 1980s, a new wave of reform hit the schools, spurred by the publication in 1983 of *A Nation at Risk*, the report of the President's National Commission on Excellence in Education. That publication focused the nation's attention on shortcomings in the outcomes of American education—how poorly American children did in the three R's, how poorly they compared to children in other countries, and how few academic subjects students took in high school.

The Excellence Commission was followed by a host of other commissions at both the national and state levels, which picked up the theme of the urgent need for major reforms to improve the performance of American students. Much of the impetus for this reform movement came from business leaders, state governors, and other groups and individuals not normally involved in educational policymaking, reflecting the widespread concern about low academic achievement among young Americans.

Reform efforts have been directed toward several general areas, including improving teacher qualifications and performance, raising graduation and promotion requirements, and instituting plans for accountability for student performance by teachers and schools.

While many aspects of the educational reform movement have been concerned with improving the quality of the teaching work force, a secondary, and sometimes contradictory concern, has been how to recruit more people into the teaching profession to ease the projected teacher shortages. The first wave of reform affecting teachers focused on guaranteeing a minimum competence level through testing. There is no consensus on precisely what ought to be tested and where the lines should be drawn for admitting teachers into the profession, but the concept of testing now seems to be well established. By 1988, 46 states had enacted competency testing programs as part of the process of initially certifying teachers.

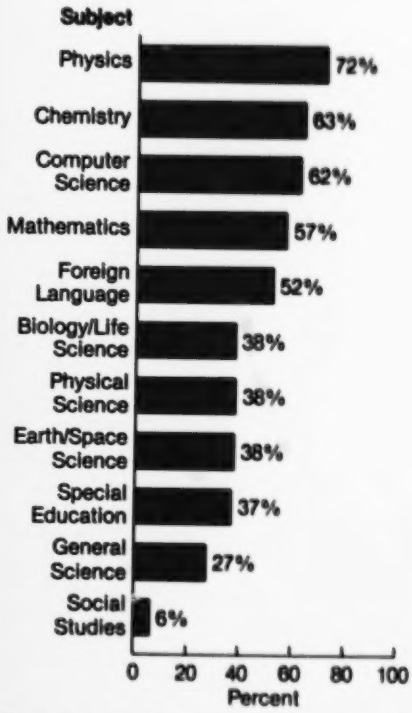
Despite the trend toward raising teacher quality, concern about possible shortages in certain teaching areas has led many states to adopt or continue alternative, emergency credentialing mechanisms to assure an adequate supply of teachers. Shortages of teachers in some fields are already being felt. In 1986, over one-half of high school principals reported difficulty in hiring qualified teachers for math, foreign languages, and specialized science courses (see Figure 6).

In the late 1980s, a second wave of reform emerged, focusing more directly on what students are taught and what they learn. In 1988 and 1989, several national groups proposed changing the way in which various subjects are taught to American students, charging that a major reason that U.S. students perform

Ann Luce

Recent education reforms have focused on the way students are taught and what they learn.

Figure 6. Percent of High School Principals Reporting Difficulty in Hiring Qualified Teachers by Subject Area, 1986



Source: National Science Foundation, National Survey of Science and Mathematics Education, 1985-86.

so poorly on standardized tests is the way they are being taught basic subjects such as history, math, and science. Some observers have expressed concerns about this development, fearing it may reduce the autonomy of individual school districts, schools, and teachers.[88]

During 1989, great momentum was building for the establishment of national performance standards for students, a notion which previously was unacceptable. The major outcome of the Education Summit held by President George Bush with the state governors in September 1989 was the proposal for the development of national goals in seven areas for all American students. These would not be federal standards for which the states would be held accountable by the federal government. Rather they would be developed in collaboration with the states and would be implemented and monitored by the individual states. Furthermore, the governors endorsed a reduction of federal and state regulations in return for a commitment to improve results.

Impact of Reform

At the close of the 1980s, however, the changes in the educational process, especially as they affect student performance, have been relatively minor and it is unclear whether they will have long-term consequences.

It may be too early to assess the impact of the reform movement. The nature of the changes that have taken place is not always clear. For example, students must now take more academic courses in order to graduate, but that does not necessarily mean that students are learning more in those subjects. Some schools have complied with more stringent requirements simply by renaming courses or spreading the same content over a greater number of courses. For students with low or average grades, increases in academic courses were primarily at the general, basic, or remedial level. They do not constitute the high-quality type of curriculum envisioned in *A Nation at Risk*. On the other hand, increased graduation requirements and competency testing have not contributed to higher dropout rates among at-risk students as some had feared.[89] Fur-

thermore, the number of students taking Advanced Placement courses at the high school level has increased substantially, which suggests that more students are taking higher-level, rigorous courses.

One impact of reform is a movement towards greater uniformity within and between states. The states are taking a stronger role in setting standards, although not in the financing, of education. The state share of expenditures rose only about 2 percent between 1983 and 1987, in part to compensate for a decrease in the federal share. Where the state share has risen, much of it has gone to increasing the salaries of current teachers.

Some of the most active reform states have been in the South, historically, the region with lowest average education expenditures, student performance, and teacher salaries. However, many southern states have experienced sustained economic growth in the 1980s, along with an upturn in student enrollments due in part to an influx of families from the northeastern and central states. Governors and other leaders in a number of southern states have lead vigorous reform efforts to improve the educational standing of their states by closing the gaps in spending and student achievement between the South and other U.S. regions.

There has been an emphasis on holding schools and staff accountable for what they do—with accountability being defined more in terms of results than the adherence to specific processes and procedures (such as how funds are spent or what instructional materials to use). One type of accountability measure adopted by several states is "education bankruptcy" statutes. Such statutes call for the state taking over administration of local school districts that do not meet certain standards. In 1989, the state of New Jersey took over the operation of the Jersey City schools under such a measure.

States have acted vigorously and aggressively in the area of school improvement in the 1980s because they believed that local school districts were not producing well-educated students. Yet the cooperation and support of local leaders is necessary to implement the new state initiatives effectively. Some local school districts also have mounted school improvement efforts.[70] The roles of the state and local school districts are undergoing change and it is not yet clear how, or if, the reform efforts of the 1980s will have changed fundamentally the relationships between them.

There are also questions about how reform measures will interact with demographic changes. Will any progress resulting from reform efforts be overwhelmed by the growing percentage of poor, minority, and non-English-speaking students—the most difficult and expensive to educate? Will the reforms concentrate on raising the performance of advantaged students and

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Improving the academic skills of minority students is a vital policy issue for the 1990s.

ignore, or worse, inadvertantly push out, disadvantaged students?

Conclusion

As we enter the last decade of the 20th century, our education system is in a period of rapid change; this will certainly continue into the foreseeable future. Demographic trends are likely to ensure that school systems will stay in flux. Added to these factors is the increasing realization that education is an integral part of our country's economic competitiveness in the international arena, and that the average performance of American students today is not adequate to meet the labor force needs of the future.

It is too early to determine whether the flurry of finance and education reforms initiated during the past two decades will produce better schools, students, and teachers. In many ways the quest for excellence runs counter to the demographic tide which is bringing not only a rising share of poor, minority, and non-English-speaking students but also a growth in elderly and nonfamily households less likely to support increases in education funding. Student enrollments will increase in the next decade, creating a demand for additional teachers. Yet, the teaching profession, underpaid and underappreciated when compared to many other professions, must attract new entrants just as the U.S. begins to experience a shortage of educated workers in other, better-paying fields. Also, the pool of available teachers is aging, suggesting a substantial attrition of teachers to retirement over the next two decades.

In addition to the economic deprivation of some students, educators must grapple with the social conditions in which children today are growing up. The pressures to use drugs, become sexually active, and take various other risks with their young lives seem shockingly great. The benefits of pursuing a quality education in preparation for adult careers and responsibilities seem distant to too many children. The schools are being asked to smooth over the results of social pressures, persistent poverty, racism, and ethnic differences to instill academic skills and a love of learning in American students.

We are still struggling to understand which policies and programs are effective in educating youth. The greatest challenge facing schools today is to simultaneously strive for excellence and serve the needs of the nation's disadvantaged students. The demands being placed on the educational system by social and economic conditions are very great, indeed; their effects should not be underestimated. □

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Discussion Points

1. Describe the trend toward an increasing proportion of minority children in the United States. How will this change American education?

2. What impact have changes in the regional distribution of U.S. population had on state and local education systems?

3. Discuss the ways that the baby-boomers (those people born between 1946 and 1964) have affected and will continue to affect the education system as they pass through the various stages of the life cycle.

4. Discuss the long- and short-term impacts on the U.S. society and economy of low educational achievement of the "underclass." Consider some of the policies that have been implemented to address low educational achievement. Have these policies been effective?

5. List the factors that point toward a future teacher shortage. How is this problem being addressed? Consider some other policies that might address this problem.

6. How do changes in population affect the tax base? (Consider: age structure, regional distribution, ethnic and racial distribution, etc.) Describe how a changing tax base might affect the funds allocated for education.

7. Discuss the impact that changing lifestyles (i.e. teenage parents, working mothers, single parent families, etc.) may have on children's educational achievement and on the U.S. education system.

Prepared by Kimberly A. Crews

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42

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43

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